



The fifty-third meeting of the Society was held in the Council Room of the California Academy of Sciences, 343 Sansome street, San Francisco, on the evening of August 22, 1914.

President Van Dyke presiding.

Minutes of the preceding meeting were read and approved.

Thirteen members responded to roll-call as follows:

Dr. E. C. Van Dyke, F. W. Nunenmacher, Percy Baumberger, J. E. Cottle, J. C. Huguenin, F. E. Blaisdell, Sr., R. F. Sternitzky, Prof. W. B. Herms, L. R. Reynolds, Miss Alice Eastwood, C. L. Fox, Wm. P. Breeze, and Prof. C. W. Woodworth.

Eight guests were present:

Mrs. F. E. Blaisdell, Mrs. L. R. Reynolds, E. O. Essig, E. P. Van Duzee, Prof. Lawrence Bruner, Miss Alberta Jackson, Mr. W. W. Sargeant, Master Winthrop Sargeant, O. N. Sanford, Miss Helen Sanford.

The report of the Treasurer was then read.

President Van Dyke said that it was important to urge the Entomologists of America to meet in San Francisco in 1915, and to meet in the form of a congress. The Zoological and Botanical societies are to hold sectional meetings.

Under new business President Van Dyke spoke of the loss of one of the oldest members of the Society, Mr. Carl Fuchs. After paying tribute to his work in the Society, the President stated that some official notice should be taken and that a copy of the same should be transmitted to Mrs. Fuchs.

Mr. Reynolds proposed that Drs. Van Dyke and Blaisdell be appointed as a committee to draw up a set of resolutions, and spread the same upon the minutes of the Society, and that a copy be sent to Mrs. Fuchs.

The proposition was seconded and carried.

The following new members were proposed:

Master Winthrop Sargeant, proposed by F. W. Nunenmacher; E. O. Essig, by Dr. Van Dyke. Both proposals were seconded by Dr. Blaisdell. Mr. E. P. Van Duzee was proposed by Mr. Frank Stephens of San Diego, and seconded by Dr. Van Dyke.

The candidates were declared elected by unanimous consent.

Miss Eastwood being present, and having just returned from

a collecting trip to Alaska, was called upon to report facts of interest. The main object of the expedition was to collect and study the willows. Miss Eastwood stated that insects were plentiful on the Catkins, especially Hymenoptera and Diptera.

Prof. Bruner was next called upon. He gave a biographical sketch of himself and how he began the study of Entomology, and his interest in the Orthoptera. His talk was heartily enjoyed.

Mr. Van Duzee in response to a call, gave an outline of his work on the Hemiptera and the list that he was preparing.

E. O. Essig told of his work along the lines of Economic Entomology, his special interest being centered upon the life histories of the injurious insects,—particularly to determine what an insect is from the taxonomic, or specific standpoint, and to know positively what insect is meant.

Prof. C. W. Woodworth spoke of Entomology as a basis of a personal employment. Twenty different occupations are presented by that branch of Biology. One occupation for example is an ant-killer, as of the Argentine ant.

Mr. Fox reported his trip to Upper Soda Springs, Siskiyou County. He gave a list of the Lepidoptera taken on Mount Bradley, at an altitude of 7000 feet.

Prof. Herms stated that he was interested in Taxonomy, and that his work is along the line of Parasitology. He said parasites are abundant in California. The medical parasites has been a special line of study and that it has been observed that the species of Mosquitoes have increased in the Imperial Valley since irrigation has been begun.

Mr. O. N. Sanford, one of the pioneer Entomologists of California, gave reminiscences of his correspondence with Henry Ulke, John L. Le Conte and Dr. George Horn. These entomological leaders determined his material, and that Le Conte had at the time of his death some 40 or 50 new and undescribed species. The latter were turned over to Dr. Horn after Le Conte's death. These species were from the material sent to Le Conte by Mr. Sanford.

Mr. Sanford further stated that he started collecting about 1875. At that time Dr. Blaisdell had not begun to make a collection. He recalled some points relating to a visit made by

Frank Blaisdell to see his collection when living at El Cajon, San Diego County, California. He believed that Mr. G. W. Dunn had helped Blaisdell in getting his first species determined. Dr. Blaisdell said that it was true.

Mr. Nunenmacher gave his field experience in the collecting of *Omus*. He collected by the compass. When a hill was covered more or less with timber or brush, and sloped to the north, he said that *Omus* was sure to be found there. Some further facts were stated in regard to the distribution of *Omus*.

Dr. Blaisdell was called upon to state what he had recently been doing in the study of *Eleodes* and *Coniontis*. He stated that the characters made use of by Col. Casey in his classification of *Coniontis* were very variable and could not be relied upon for the absolute determination of species. That *Coniontis* presented greater taxonomic difficulties than did *Eleodes*, and that at the present time it was impossible to give any definite idea of the relative value of the exoskeletal characters, and that the primary genital characters were different from those of the *Eleodiini* and might be of some service.

President Van Dyke discussed the instability of characters and cautioned students to be careful in their estimation of the same. His summer's work in Vancouver, B. C., Washington and Oregon was briefly reviewed.

The annual election of officers being in order it was proposed and seconded that the same officers be re-elected. So carried. Adjournment.

A number of exhibits were viewed and discussed. Mr. Cottle was present for only a few minutes and stated that on account of business he could not remain. Mr. Cottle congratulated the Society on the very fine evening's program and on the number of notable Entomologists present.

F. E. BLAISDELL, Secretary.

The fifty-fourth regular meeting of the Society was held on the evening of November 21, 1914, in the Council Room of the California Academy of Sciences.

President Van Dyke in the chair.

The minutes of the preceding meeting were read and approved.

The following thirteen members responded to roll call:

F. W. Nunenmacher, Dr. E. C. Van Dyke, J. C. Huguenin, Miss Julia Wright, Dr. F. E. Blaisdell, R. F. Sternitzky, Ralph Hopping, L. R. Reynolds, C. L. Fox, Wm. P. Breeze, Prof. C. W. Woodworth, E. O. Essig, E. P. Van Duzee.

Thirteen guests were present:

Mrs. F. E. Blaisdell, Mrs. L. R. Reynolds, Mrs. George Wright, Mrs. E. O. Essig, Mrs. Ralph Hopping, Arthur Peterson, Mary A. Ames, Helen M. Gilkey, Pearl Walther, Dr. Barton W. Evermann, Henry L. Viereck, Helen Sanford, O. N. Sanford.

The report of the Treasurer was read.

The committee on drafting resolutions on the death of Carl Fuchs stated that they were not ready to report.

The following letter from Fordyce Grinnell was read:

"I have just returned from a month's trip across the Sierras from Sanger in the San Joaquin Valley to Independence in Owen's Valley, with Mr. Robert L. Beardsley of Los Angeles. It was my first trip into these wonderful mountains of big things—big trees, big canyons, big rocks, big trout and big rivers,—so it was a revelation to me. We ascended Mount Gould (13,000 feet elevation) and went over Kearsarge Pass.

"In the King's River Canyon—a wonderful gorge—I took my first specimens of the pine butterfly, *Neophasia menapia* Feld; they spend most of the time flying around the tops of the pines out of reach of the net. On Mt. Hutchings Ridge (over 10,000 feet) I took a nice series of *Chionobas ivallda* Mead, my first captures of any of these Arctic butterflies.

"Around Bullfrog Lake and Charlotte Lake (10,000 feet+) I took a lot of *Colias behrii*, *Chrysophanes cupreus*, *Chrys. editha* and *Pamphila tecumseh*. We met a number of interesting people but no entomologists, but some of the people knew our friend Ralph Hopping. Besides the interesting butterflies spoken of, I took a good many others as well as some beetles and other orders."

President Van Dyke proposed Mr. Henry L. Viereck for membership. The proposal was seconded by Dr. Blaisdell. Mr. Nunenmacher proposed that the election be unanimous and that

the Secretary cast the vote. Seconded and carried. Mr. Viereck was declared a member.

President Van Dyke stated that it could not be determined whether the American Entomological Society would meet here in 1915, until after the meeting of that Society in the East. There is probably no doubt about their doing so. He also said that it had been decided to introduce formal topics for discussion at each meeting of the Pacific Coast Entomological Society, and that the evening's program was the Western Cicadidæ and the Silk Producing Moths of the Pacific Coast.

Mr. Van Duzee was first called upon to open the discussion on the Cicadidæ, which was once considered the highest group of the Homoptera. At the present time the Fulgoridæ is considered as such.

Mr. Van Duzee said that there are 13 genera in North America, 52 species being recorded. Five genera and 21 Californian species known to him included representatives of the three subfamilies into which Dr. Distant has divided the Cicadidæ. The first subfamily, the *Tibicina*, includes three of our species, only one of which, *Cacama crepitans* (described as *Proarna*), was known to him. Of the second subfamily, the *Cicadiniæ*, only *Zammara smaragdina*, has been reported from California and that doubtfully. The third subfamily, the *Tibiciniina*, includes the remaining 17 species then known to our fauna; its largest genus, *Okanagana*, having its center of distribution on the Pacific Coast as has also *Platyptidia*.

President Van Dyke—Prof. Woodworth, what is the economic status of the Cicadidæ?

Prof. Woodworth—What does constitute economics in Entomology? It means the saving of money by controlling Insects. Harvest flies have figured quite a good deal in Eastern literature on Economic Entomology. A species is injurious to fruit trees by laying its eggs in the trees, partly on account of the great number. This is the seventeen-year species and its varieties. A certain amount of damage is done by the larvæ, which live on the roots of plants. Yet, it is hard to find estimates. The seventeen-year species grows so slowly that the amount it consumes is not in accordance to body size.

Dr. Blaisdell—It has been some time since my observations have been made on the Cicadidæ and time has somewhat

seriously dimmed my recollections on many points. As Mr. Van Duzee has just completed the identification of the species in my collection, I will be able to correct several errors that have existed for a number of years. In referring to a communication received from Philip Uhler and dated November 8, 1890, I find that Uhler was in doubt about the species that I have had labeled *Tibicen striatipes*. A specimen sent him "does not tell the story of its identity. Both sexes are required for that purpose, because of its intermediate relationships." This species has been identified by Mr. Van Duzee as *Okanagana vanduzeei* Distant and it is not *striatipes* at all. This species I have found moderately common at San Diego and my specimens were collected on May 10th. The species that I have considered as *Tibicen blaisdelli* Uhler, is not that species at all according to Van Duzee, but *Okanagana* sp. In referring again to Uhler's letter, I find that he remarks as follows: "You have sent two well separated species, one of which is new to science, and very interesting to me. Permit me to dedicate it to you. Its chief novelty lies in the presence of a callous area at the base of the internal apical cell. The veins of the hemelytra are also stouter than usual, and these characters are present in both sexes. It is your No. 30, and two specimens, a male and female, are present in your box. I have kept them back for the present, for more adequate study and description; but I will return them speedily, if you prefer that I should do so." So it is very evident that I have never seen a specimen identified by Uhler as *blaisdelli*. Those in my collection have been considered as that species on account of the presence of the alar callouses. Mr. Van Duzee informs me that *blaisdelli* is quite different from those that I have so labeled. My specimens were collected in May (5th to the 10th), at San Diego, others at Mokelumne Hill, Calaveras County, in August. The specimens identified by Uhler as *Tibicen hesperia*, Van Duzee considers to be *Okanagana californica* Distant. A dark species of *Okanagana* from Shasta Retreat, Siskiyou County, (elevation 2416 feet) and collected in July is represented in my collection by two specimens. Another dark specimen with hoary pubescence was collected at Duncan Mills, Sonoma County, in July. My series of eight specimens of *Okanagana rimosa* Say, were collected at Duncan Mills in July, and in Eldorado County, especially at Tallac in July. My two specimens of *Okanagana vanduzeei* var. *consobrina*

Distant, were collected in July at San Diego and Coronado. A particularly interesting species is one that I have taken at Mokelumne Hill (elevation 2300 feet), and considered new to science by Mr. Van Duzee. It was taken on the branches of Manzanita (*Arctostaphylos*). The five specimens were taken at one time and place and never seen nor taken again by me. Its color is that of the Manzanita bark,—a reddish brown. Its call is a short chirp and its ventriloquistic powers make it very difficult to locate on the branches as the insect constantly changes to the opposite side of the limbs of the shrub as one approaches or tries to follow it. A small series of *Okanagana synadica* Say, was taken in June at Mokelumne Hill, on short stubble in a grain field. I have found *Platypedia minor* Uhler, very common on the hillsides bounding Mission Valley, at San Diego. All my specimens were collected in May. The *Platypedia putmani* Uhler, that I have were collected in June, at Shasta Retreat, by Beverly Letcher. The *Platypedia areolata* Uhler, that I possess were taken at Mokelumne Hill in June. A race of this species is common in Marin County during May. My series of four specimens of *Tibicenoides cupreo-sparsus* Uhler, was taken in Mission Valley at San Diego, all during the month of May. It is found on tufts of low grass, has a feeble flight and a low call.

I have observed the larvæ and pupæ of several species but notes of any value are lacking. The larvæ occur two to two and one-half feet below the surface in solid earth. The collection that I exhibit contains three genera and 14 species and varieties, all Californian.

President Van Dyke—What affinities do our species show, Mr. Van Duzee?

Mr. Van Duzee—With Eastern and Southern Cicadinæ, *Okanagana*.

Mr. Reynolds read an account of the Cicadidæ given in Westwood's and Donovan's Insects of China.

* *Mr. Essig*—To what extent do they feed?

Prof. Woodworth—They do feed but I am not certain to what extent. Has anyone heard any difference in their tones at different times of the day? I have observed that their organs produce different tones at different times of the day.

Mr. Van Duzee—There is a difference in the songs or

shrilling of certain of the San Diego County species and most of the forms can be recognized by their notes. I desire to call particular attention to the loud rattling note of *Okanagana distanti*, and to its habit of sounding in unison at long intervals (10 to 20 minutes). I would also mention the feeble continued note of the tiny but beautiful *Tibicinoides cupreo-sparsus* and of the short piping note of *Platypedia minor*.

Mr. Hopping—I have also observed the difference.

Mr. Nunenmacher—In collecting the Cicadidæ I have found it the simplest way, after locating them and noting the grass, shrubs or trees upon which they are, to wait until evening just as the sun is going down, or early in the morning, and sweep the grass or beat the shrubs or trees. No trouble will be found in picking them up as they will lie still for several minutes. In sweeping the grass for them you must sweep hard and low; I have taken as many as six at one beating.

The subject of the silk-producing Lepidoptera of the West Coast, was introduced by Dr. Van Dyke, who first rapidly ran over a list of the various silk-producing insects and laid stress upon the relationship that this no doubt bore to their phylogeny; then gave a rapid review of some of the principal silk-producing families of the Lepidoptera, accompanied with a few remarks upon the various species which were known to produce commercial silk; then passed on to a discussion of those which were to be found on this Coast. The most important ones of this territory, that were discussed were those of the Saturniidae and the genus *Melacosoma* or tent caterpillars.

Mr. Nunenmacher—The *Gliceracampia* in Arizona breed in the same nest for several years, the larvæ or caterpillars feed at night and hide in the tent during the day; the nest is large. The one I saw was about eighteen inches long and four inches in diameter. The larvæ went two or three yards away from the tent to feed.

Dr. Van Dyke—The original site of the tent is indicated by the defoliation which is produced in a circle. These larvæ are usually heavily parasitized.

Prof. Woodworth—Experiments carried on showed that the economic value of the silk produced by *Bombyx mori*, was the same per cent. as that of other domestic animals, as compared to the wild species. Many attempts have been made to raise wild silk-

worms in this country and to weave a little piece of cloth, but if it were possible it would be some thirty or forty times more costly as that of the regular commercial silk. Experiments have been carried on to get the worms to eat other plants than mulberry. They would not eat enough and get a bacterial disease of the intestines and practically starve. Even on mulberry the temperature must be right and not damp, as the latter will bring on these diseases.

Mr. Nunenmacher—Why do not silk-worm growers raise the weeping mulberry to feed the silk worms? I had a friend who worked in Japan and he related how the Japanese worked for years before they got a weeping mulberry to use as food. It can be trailed along fences and can be trained so that all parts of the plant can be reached. I have often asked the Japanese here and they tell me that they use it for food for the silk-worms.

President Van Dyke stated that it will be desirable to get formal discussions on dipterous subjects, or some part of an order at least.

Prof. Woodworth—I would like to hear similar discussions as carried on tonight by the Coleopterists and Lepidopterists.

Blaisdell, Van Duzee and the California Academy of Sciences exhibited boxes of Cicadidæ.

Adjournment.

F. E. BLAISDELL, Secretary.

The fifty-fifth regular meeting of the Society was held on the evening of March 6, 1915, in the Council Room of the California Academy of Sciences, 343 Sansome street, San Francisco.

President Van Dyke in the chair.

Minutes of the preceding meeting were read and approved.

The following members were present:

President Van Dyke, F. W. Nunenmacher, J. E. Cottle, Dr. F. E. Blaisdell, Ralph Hopping, L. R. Reynolds, Prof. W. B. Herms, C. L. Fox, Wm. P. Breeze, E. O. Essig, E. P. Van Duzee, and H. L. Viereck.

Eleven guests were in attendance:

Mrs. L. R. Reynolds, Mrs. J. E. Cottle, Mrs. F. E. Blais-

dell, Mrs. Ralph Hopping, Mrs. L. R. Reynolds, Miss Mary A. Ames, Mr. John O. Graves, Prof. R. W. Doane, Ignatius McGuire, E. P. Meinecke, Fred Rasmussen.

The committee on the death of Mr. Fuchs stated that they were ready to report as follows:

RESOLUTIONS ON THE DEATH OF CARL FUCHS.

Whereas, In the fulness of time death has taken from us our most venerable member, Mr. Carl Fuchs, the organizer and a charter member of our Society; and

Whereas, Mr. Fuchs was held by us in the highest esteem for his devotion to Entomology, as well as for his lovable personality and happy temperament; and

Whereas, His personal enthusiasm has been ever a source of stimulus to develop Entomology on the Pacific Coast, and to aid his colleagues with advice and material, we shall mourn his loss; therefore be it

Resolved, That we publish a short sketch of his life in the Proceedings of the Society; and be it further

Resolved, That we carry to his family our sympathy for its loss and our tribute to his industry and example; that we imitate his persistency in collecting and in the preparation of specimens.

(Signed) F. E. BLAISDELL, SR.,
EDWIN C. VAN DYKE.

A communication from Mr. Fordyce Grinnell, relating to a paper by Mr. J. R. Haskin of Los Angeles, was then read, the title of which was "Boisduval's *Lycana piasus* and *Lycana rhæa* (Lep.)."

Mr. Haskin's paper* was read and discussed. Very little was said as none of the members were acquainted with the species.

Mr. O. N. Sanford was proposed for membership by Dr. Blaisdell; the proposal was seconded by President Van Dyke.

Mr. Sanford was unanimously elected and his name entered in the roll-book.

Miss Mary Ames was proposed for membership by Mr. Hopping; the proposal was seconded by Mr. Cottle.

* See Ent. News, Vol. XXVI., No. 8, p. 357.

Mr. John O. Graves was also proposed and seconded by the same members. The election was unanimous in each instance, and their names entered in the roll-book.

The question of deciding upon a Field Day next came up. After some discussion it was decided to hold the meeting at Redwood Canyon, Contra Costa County, California, on May 23, 1915.

Mr. Reynolds suggested that a leader be appointed for that day. The suggestion was put in the form of a motion, seconded and carried. President Van Dyke appointed Mr. Reynolds to act as the leader of the outing.

The Secretary drew attention to the fact that the Entomological Club of Los Angeles, Mr. V. Duran, Secretary, was sending notices of their regular meetings to the Pacific Coast Entomological Society. A vote of thanks was proposed and the Secretary instructed to transmit the same to the Los Angeles Entomological Club.

President Van Dyke stated that the Entomological Society of America would hold its meetings here this year. The meetings are to be held in the day time, so that members would be free to attend the special lectures given in the evenings. It is intended to have one or two excursions for the Entomologists. There is to be no section on economics, as the National Society will meet here. Papers are to be read by invitation. Tonight there will be a symposium on the Diptera.

Prof. Doane of Stanford University, being called upon, considered the Order Diptera from a systematical viewpoint. It was stated that in the Diptera, wingless species were found in twelve or fifteen families. Lice are wingless, as wings would be in the way. Prof. Doane further stated: "I have been interested for some time in the Tipulidæ, which has wingless forms. Small wingless spider-like tipulids have been found in the snow. The larvæ of a tipulid are destructive to vegetation, twenty-eight larvæ have been observed to the square inch after a solution of cyanide had been applied to the earth. There are 450 species in the genus *Tipula* and others are undescribed. The species are abundant in individuals.

Prof. Herms of the University of California considered the Relations of Diptera in the Transmission of Disease, a most important study; one-third of the time is devoted to their study. There are fifty families of Diptera represented in

California, eleven of which have important relations to the transmission of diseases.

Mr. Essig, also of the University of California, considered the Diptera of economic importance, especially those injurious to field crops.

Mr. Breeze exhibited a box of Lepidoptera from the Philippine Islands, among which were specimens of the genus *Ornithoptera*.

Dr. B. W. Evermann exhibited a piece of spider web from Bologna, which was like a piece of cloth. It is believed that it took many decades to develop it.

Mr. Fox showed a box of Diptera.

Adjournment and social discourse followed.

F. E. BLAISDELL, Secretary.

The fifty-sixth meeting, or Field Day of the Society, was held on May 23, 1915, at Redwood Canyon, Contra Costa County, California.

The following members participated in the outing:

President Van Dyke, L. R. Reynolds, J. E. Cottle, F. W. Nunenmacher, F. E. Blaisdell, Sr., C. L. Fox, Wm. P. Breeze, and Miss Mary Ames.

The following guests were in attendance:

Mrs. J. E. Cottle, Mrs. F. E. Blaisdell, Mrs. L. R. Reynolds, Miss Marie Nunenmacher, Mr. and Mrs. Hildebrand and family, and F. E. Blaisdell, Jr.

The weather was warm, although the sky was cloudy and threatening, but no rain fell. Collecting was excellent. Elaterids were abundant on the live oaks, *Zeugophora californica* was beaten from willows.

The day was enjoyed by all.

F. E. BLAISDELL, Secretary.